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PRELIMINARY COMMUNICATION CONCERNING
THE DECUSSATION OF THE PYRAMIDS.

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I N a cat, which was kept alive three months after the destruction of an entire cerebral hemisphere [the left] as well as the corresponding thalamus, and in whose brain, as the microscopical examination showed, there was complete destruction of the pyramid tract in the crus, pons, and oblongata, I was surprised to find that an indication of it apparently existed in the region of the decussation. While the right pyramid crosses over in the characteristic manner, breaking through the gray substance of the opposite side so as to decapitate the anterior horn, there is a slim but perfectly symmetrical bundle which intersects it and crosses in the same manner. Being less compact, however, it has not yet been possible for me to decide whether it enters the lateral column of the spinal cord or the gray matter which lies in the debatable ground between the nuclei of the posterior columns and the reticular formation. For a brief distance in its cephalad course it occupies the ventral face of the right half of the oblongata.

The bundle in question sends off a few detachments into the fibre bundles, which, running into the anterior horn, constitute a transition from the type of the massive decus-

sation of the true pyramid to the fascicular decussation of the anterior commissure. A portion, however, as above stated, exactly repeats the course of the true pyramid decussation. Individual fibres can be traced uninterruptedly from the neighborhood of the right "debatable" field across the median line, along the mesal side of the left half of the oblongata facing the interpyramidal sulcus to the ventral face of the oblongata. From the fact that absolutely no trace of the left pyramid can be found in the level of the trapezium or pons, it is to be inferred that cephalad it becomes a part of the lemniscus. This tract, although greatly atrophied, is represented on the left side.

In some measure this observation is supplementary to one made some years ago¹ in a case of secondary degeneration of the interolivary layer. I there found that the atrophic field of the interolivary tract was connected with degenerated fasciculi which it derived from the area of the anterior pyramid, whose veritable fibres were healthy, although the detachments from the interolivary layer were absolutely destroyed. Such detachments could be traced the entire length of the oblongata, even to the border of the pons.² It appears, then, that destruction of the pyramid tract does not destroy certain fibres participating in the true pyramidal decussation [cat], while destruction of the interolivary layer results in their death. The inference is obvious: that there is a system of fibres, intermediate in position, between the pyramid and interolivary tract, decussating with the former—apparently derived from the nuclei of the posterior columns,³—and running with the latter in its cephalic course. It was possibly the discovery of similar fibres that misled Meynert into the formation of his well-known but now abandoned view regarding the "sensory" and "motor" decussation of the pyramids.

Should it be determined that the preserved fasciculus crossing in the pyramidal decussation from the left oblon-

¹ "A Contribution to the Morbid Anatomy and Symptomatology of Pons Lesions." *American Journal of Neurology and Psychiatry*, vol. ii., No. 4.

² *Loc. cit.*, plate v.

³ This remains doubtful, both in the negative observation in the human case, and the positive one made on the cat.

gata to the right cord became an ingredient of the crossed pyramid tract in the latter, it would prove a confirmation of Steinlechner-Gretschischnikoff's¹ opinion, that this tract contains fibres from centres situated caudad of the cerebral hemispheres. These observations would also tend to support the view first expressed by Rohon, and criticised by Starr, that the pyramids do not exclusively develop from the cerebrum downward. It may not justify the contrary statement, that a part of them develops from below upward, but they conclusively prove that the pyramid tracts contain fibre admixtures from other sources than those from which Flechsig exclusively derived them.

¹“ Ueber den Bau des Rückenmarkes bei Mikrocephalen,” *Archiv. für Psychiatrie*, xvii., p. 689.